

## ON-LINE PHASE NOISE MEASUREMENT FOR LAYERED MODULATION

### ABSTRACT OF THE DISCLOSURE

A method and apparatus for measuring the phase noise of an low noise block (LNB) and other devices while the device under test is on line is disclosed. Using a signal processing procedure over a short duration of a received signal, the technique demodulates the signal to expose the phase history of the underlying carrier for measurement. In an exemplary apparatus timing and carrier recovery on A/D samples are performed conventionally, a linear phase is estimated from minimum mean square fitting to the recovered carrier phase history, the single tone carrier is removed from the recovered phase to yield a residual phase. A fast Fourier transform (FFT) can be performed on the residual phase to produce a phase noise spectral measurement at an input of the demodulator.

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